



Space Nutrition



Volume 3

Food for Flight

Issue 7

Stress Matters

Do you think you could share your classroom with 2 of your closest friends for 6 months, 24 hours a day, away from everyone else you know? Would you be homesick?

Would you worry about your family? Would you get tired of working in the same room with your friends every day? The members of the Biobehavioral Laboratory (BL) try to understand what the astronauts will experience emotionally while they are in space. They work with other medical team members to determine the stresses involved with each mission, such as differences between crew members, the isolation of being in space, and the work required. Scientists in the BL develop techniques that help astronauts deal with the stress of being away from home and working with the same people every day. Some of these techniques are making phone and video calls to family members possible, and offering a hobby for each person during the flight (playing the guitar, reading books, watching movies). Exercise is one way to help reduce stress, and it helps your muscless too!



In one sentence, the job of the Nutritional Biochemistry Laboratory is to figure out how much of each nutrient (calories, calcium, vitamins, other minerals, you name it) the body needs during space flight. As we find out new information about these nutrient requirements, it is handed over to specialists in NASA's Space Food Systems Laboratory. They have the tough job of developing foods and menus that will not only meet these nutrition requirements, but also get through the many other constraints that are put on space foods.



Preparing food to eat on orbit is a challenge - no crumbs are allowed and the food must not float away while an astronaut is trying to eat it. Another challenge for food system developers is handling trash. Wrappers and empty packages must be compressible to minimize trash volume on the spacecraft. The garbage truck doesn't stop by the International Space Station, and there are very few opportunities to get trash off the vehicle. In fact, trash is disposed of only when vehicles such as the Shuttle, the Soyuz capsule, and the Progress cargo vehicle depart. These are just a few of the challenges of developing space foods. The NASA Space Food Team does a great job of meeting these challenges, and of developing foods that the astronauts will like during their space missions.

Curiosity Corner

Kevin from Pennsylvania asks,
"Do astronauts need to eat more, less or just the same while they are in space?"

Astronauts need to eat just as many calories in space as they do on Earth. That usually surprises people, but we have done studies to prove this.

Send your comments or questions to:

Space Nutrition Newsletter
Nutritional Biochemistry Laboratory
Mail Code SK3
NASA - Johnson Space Center
Houston, TX 77058



Did you know?

- Food storage is a big issue for space travelers. Today no freezers or refrigerators for food exist on spacecraft, so the food must be "shelf-stable" and not spoil over a period of at least 6 to 12 months. Food for a Mars mission will need to be stable for up to 5 years!
- None of the U.S. space foods are served in tubes. Most are either dehydrated, in natural form, or thermostabilized (heated to high temperatures and packaged in cans or closed pouches).
- Taste and texture (how the food feels in your mouth) are very important for space travelers. Many taste tests are conducted when new foods are being developed.
- Before each mission, astronauts select their favorite foods from the available flight foods. Before the mission, they taste the foods they have selected to make sure that they really do like them. The most popular space food is shrimp cocktail.



Thanks to the students of Langston Elementary School in Hot Springs, Arkansas for their drawings of future space vehicles and lunar bases.

Solution to last month's crossword:

E	X	P	L	O	R	A	T	I	O	N		R	I	S	E
N		I		E		A		A		N					
D	U	L	L		S	O	L	A	R	S	Y	S	T	E	M
E		O		W	E		E		A			E		E	
A	R	T		A		N		W				R	A	C	E
V			C	A	R		T	E	A	M		N		H	
O	R			C				I		E	V	A		A	
R	O	A	M		H	E	A	L	T	H		T	I	N	T
	L		A					I		A		I		I	
B	L	U	R		H		F	A	B		T	O		C	
I				S	P	I	R	I	T		I	F		N	E
O				L		O			O		T		A		L
L	O	T		A	L	V		F	E	A	R		L	U	S
O		E		N		E		F		T	O	P		P	I
G	I	A	N	T		R		P		A		I		A	
Y		R		S	Y	S	T	E	M		M	A	T	H	P

Word of the Month

Scavenger

Can you guess what this word means? Look for the meaning of the "Word of the Month" in the next issue of Space Nutrition.

On March 1, 2004, a NASA webcast will feature food and nutrition. To view this, join Earth Crew!

<http://edspace.nasa.gov/index.html>

Check out these cool NASA links for more fun space science and space food facts!

<http://spaceflight.nasa.gov/spacenews/factsheets/>

<http://www.nasa.gov/audience/forkids/index.html>

<http://www.spaceflight.nasa.gov>



Check out the Nutritional Biochemistry Laboratory's website for more information about nutrition and space.

<http://haco.jsc.nasa.gov/biomedical/nutrition/>

